

DRQ, MULTIPLE WH AND EXTRACTION OUT OF WH-ISLANDS*

Kleanthes K. Grohmann

University of Maryland

In this paper I will reassess the received assumption that extraction of a Wh-element out of a Wh-island is impossible in German. After presenting the main facts on extractability which show that topics, but not Wh-elements may be extracted out of Wh-islands, I will turn to questions involving two Wh-elements (henceforth, Multiple Wh). I will show that a context-dependent well-formedness condition underlies the formation of these in German which I will refer to as "Discourse-Restricted Quantification" (DRQ). I will then suggest to anchor DRQ in the syntax by topicalization of both Wh-elements in German Multiple Wh-constructions. This approach makes the prediction that in theory Wh-extraction should be allowed if they really are "topic-like." Further cross-linguistic data also show that Wh-extraction out of Wh-islands is possible for D-linked Wh-elements, i.e. topic-like Wh-elements.

1. (WH)-EXTRACTION OUT OF WH-ISLANDS

Consider first the German data given in (1) and (2): we can see that topics may be extracted out of an embedded Wh-question (see, e.g., Müller and Sternefeld 1993, d'Avis 1996). This is shown for a bare plural (1a) and a demonstrative DP (1b).¹

- (1) a. *Bücher* weiß ich [wer *t* gelesen hat]
'Books, I know who read'
- b. *Dieses Buch* weiß ich [wer *t* gelesen hat]
'This book, I know who read'

In (2), on the other hand, we see that extraction of a Wh is impossible, regardless of whether the Wh-element is a bare Wh (2a) or a complex, D-linked Wh-phrase (2b).²

- (2) a. * *Was* weißt du [wer *t* gelesen hat]?
'What do you know who read?'
- b. * *Welches Buch* weißt du [welcher Student *t* gelesen hat]?
'Which book do you know which student read?'

A closer look at other languages—related to German as Swedish in (3), unrelated to German as Italian in (4) or completely different from German as Chinese in (5)—reveals that Wh-extraction out of islands is not always ungrammatical (Comorovski 1996:ch. 5).

The data from Swedish (Maling 1978, Engdahl 1980) and Italian (Rizzi 1982) show that D-linked Wh-phrases may be extracted out of Wh-islands, unlike bare Wh-elements.

- (3) a. * *Vad* visste ingen [vem som *t* skrev]?
'What does no one know who wrote?'
- b. *Sven undrar vilken bok* alla studenter minns [vilken författare som *t* skrev]
'Sven wonders which book all students remember which author wrote'
- (4) a. ?? *A chi* non ti ricordi [quanti soldi hai dato *t*]?
'To whom don't you remember how much money you gave?'
- b. *A quale dei tuoi figli* non ti ricordi [quanti soldi hai dato *t*]?
'To which one of your sons don't you remember how much money you gave?'

The Chinese data suggest that the strength of Wh-islands may be parameterized (Wu 1996:174): extraction of a simple Wh is fine as in (5a); on the other hand, a Complex Noun Phrase Island is universally strong as extraction is impossible, shown in (5b).³

- (5) a. *Shenme dongxi Zhangsan xiang zhidao* [Lisi mai mei mai t]?
 'What did Zhangsan want to know whether Lisi bought?'
 b. * *Shenme Zhangsan xiangxin* [Lisi tou le t [de yaochuan]]?
 'What is it such that Zhangsan believes the rumour that Lisi stole it?'

From the first observation, we might conclude that a Wh-island in German is strong with respect to extraction of Wh-elements. As this "parameterization" seems hard to sustain (cf. Topic-extraction and Wh-extraction in other Germanic languages), I will try to prove it wrong.

We can summarize the results so far as follows. Wh-islands are weak islands from which topics can be extracted (1). They seem to be strong for extraction of bare Wh-elements (3a, 4a). However, complex (= D-linked) Wh can be extracted (3b, 4b). Chinese Wh are transparent for Wh-extraction (5a) unlike a CNP (5b). In German, Wh-islands seem to be strong for any Wh-extraction (2a, 2b).

2. THE RELEVANCE OF TOPIC-EXTRACTION IN GERMAN

In this section, I will suggest that Multiple Wh in German should be analysed as involving Wh-topics and present a syntactic approach within the Minimalist Program (Chomsky 1995).

As is well-known, Multiple Wh in German seem to violate the Superiority Condition (Chomsky 1973). Various syntactic and semantic approaches to this condition as well as the apparent paradox in German have been put forward. (For a summary, please see Hornstein 1995 or Grohmann 1998b, among others; the following is taken from Grohmann 1998b:15ff.)

In English, contextual specification also allows apparent violation of the Superiority Condition: if the two Wh-phrases are D-linked, fronting of either Wh is fine (Pesetsky 1987):

- (6) a. Which customer bought which item?
 b. Which item did which customer buy?

Let us take a look at the felicity of Multiple Wh in a discourse context. Consider (7).

- (7) Situation I: A jeweler comes home and tells his wife about his success.
 "I sold a gold watch, a platinum ring and a silver bracelet today."
 a. Who bought what?
 b. * What did who buy?
 c. # Wer hat was gekauft?
 d. # Was hat wer gekauft?

The Multiple Wh in German are both ill-formed, regardless of whether the subject-Wh is fronted (obeying Superiority) or the object-Wh (violating Superiority). Note that in prompting this type of question, only reference to one Wh has been made, namely to the *what*. This context seems to be sufficient to legitimize the Multiple Wh in English as in (7a).

In contrast, consider (8): here, reference to both Wh-elements has been introduced in the preceding discourse. While it changes nothing on the grammaticality status of the English construction, it licenses both types of Multiple Wh in German: either the subject-Wh or the object-Wh may be fronted.

- (8) Situation II: Same as above, but he tells her "I sold a gold watch, a platinum ring and a silver bracelet to a young man, an old lady and a teenager today."
- Who bought what?
 - * What did who buy?
 - Wer hat was gekauft?
 - Was hat wer gekauft?

From this (and further contexts; see Grohmann 1998b:17ff.), I propose the following felicity condition on Multiple Wh in German:

- (9) *Discourse-Restricted Quantification (DRQ)*
 Questions involving two Wh-expressions are well-formed iff the referent sets of both Wh-expressions are determined by the context; determination of referent sets is satisfied by at least two referents in the discourse.

I would like to suggest to take the complex structure of partitives as the starting point for a syntactic anchoring of DRQ. Consider the contrast in (10) from English:

- (10) a. * Which professor did who kiss *t*?
 b. Which of these professors did who kiss *t*?

It is not enough for an object-Wh to be D-linked in order to be fronted over a subject-Wh. However, if this "D-linked" Wh is even more complex such as a partitive Wh-phrase, the result is grammatical for many speakers.

I suggest something like (11) for the structure of Wh-elements. German Wh-elements in Multiple Wh always bear a [Top]- and a [Wh]-feature, where the partitive part of an abstract, more intricate structure is the locus of [Top]. This may also be the case for English partitive Wh (depending on speakers' acceptability of (10b)), but it is not in Multiple Wh—DRQ is not at work.⁴

- (11) a. [_{DP} *welchen* [+Wh] von [_{DP} *diesen* [+Top] Professoren]]
 a'. [_{DP} *which* [+Wh] of [_{DP} *these* [+Top] professors]]
 b. [_{DP} *wen* [+Wh] [_{DP} [+Top]]]
 b'. [_{DP} *who* [+Wh]]

With this in mind, (12) represents two possible derivations for Multiple Wh in German: both Wh move to TopP, conforming to locality conditions such as the Shortest Move/Minimal Link Condition, and the higher of the two then moves on to CP to check its Wh-feature off.

Note that, as shown in (12b), a possible intervening non-Wh-subject is obligatorily topicalized. We can justify this with the inherent topicality of subjects in many languages.⁵

- (12) a. [_{CP} Wh_j [_{TopP} t_j [_{TopP} Wh_i [_{TP} SU...t_i...t_j...]]]]
 b. [_{CP} Wh_j [_{TopP} t_j [_{TopP} SU_k [_{TopP} Wh_i [_{TP} t_k...t_i...t_j...]]]]]

On an empirical level, this approach gives us a straightforward account for the strange behaviour of intervening quantifiers in between two Wh-elements, as discussed by Beck (1996). Instead of accounting for these apparently different facts—shown in (13)—by postulating a return to *Barriers* and adding a number of semi-semantic conditions, however, we can capture the entirety of these data with our approach in terms of DRQ-driven Wh-topicalization.

The only added premise is that in (14) which is not unreasonable, as decreasing (or weak) quantifiers do not make good topics in the first place (cf. topicalization, left dislocation etc.).

- (13) a. * *Wem hat niemand/kein Student/kaum ein Student was gegeben?*
 'Who did nobody/no student/barely a student give what to?'
 b. *Wem hat was niemand/kein Student/kaum ein Student gegeben?*
 c. *Wem hat Martin was gegeben?*
 d. *Wem haben die meisten/viele/alle Studenten was gegeben?*
 'Who did most/many/all students give what to?'
 e. * *Wen hat kein Student von den Professoren gemocht?*
 'Which of the professors did no student like?'
 f. *Wen haben alle Studenten von den Professoren gemocht?*
 'Which of the professors did all students like?'

(14) Increasing quantifiers can be topicalized, decreasing ones cannot.

The constructions depicted in (13a-d) yield the following picture: decreasing, or non-topicalizable, quantifiers are ungrammatical in between to Wh-elements—in sharp contrast to topicalizable, increasing quantifiers. On the one hand, this suggests that both Wh-elements in German do indeed move to the left periphery (the C-domain). On the other hand, it supports the added assumption that material in between the two Wh-elements occupies a topic position. (13e-f) show the same behaviour for those Wh-phrases that can be split (see Beck 1996, d'Avis 1996 and Grohmann 1998b for more). Under the current approach, we would say that the Wh-part is separated from the rest of the phrase by material in TopP.

With this approach in mind, let us turn to the original puzzle from (1) and (2).

3. THE PUZZLE IN GERMAN: WHY NO WH-EXTRACTION?

We have already seen a tight relationship between the Wh-marked CP and TopP, hosting topics (in the general sense as argued for in Birner and Ward 1998, for example; for motivation of leftwards movement in German, see Grohmann, in progress) under a view that takes the C-domain to be more articulated than traditionally assumed.

This relationship has been discussed in the literature already for Bulgarian, among other languages. Consider (15), taken from Richards 1997:111 (based on Rudin 1985):

- (15) a. [_{TopP} Ivan [_{TopP} vcera [_{CP} kakvo kupi]]]?
 'What did Ivan buy yesterday?'
 b. * [_{TopP} *Koj* [_{TopP} vcera [_{CP} kakvo kupi]]]?
 'Who bought what yesterday?'
 c. [_{TopP} *Koja zena* [_{TopP} vcera [_{CP} koja kniga kupi]]]?
 'Which woman bought which book yesterday?'

Topics may appear fronted over the Wh, but a bare Wh may not. D-linked Wh-phrases may, however, be fronted over another complex Wh-phrase—even when a topic intervenes. This serves as another piece of evidence that Wh-phrases may in fact appear in a topic position.⁶

We can also find evidence for the presence of TopP preceding CP in German. In left-dislocated constructions, the left-dislocated element may be fronted over a Wh-element, yet rendering the entire construction unambiguously as an interrogative clause.

- (16) a. [_{TopP} *Diesen Mann* [_{CP} wer hat [_{AgSP} t [_{AgOP} *den* gesehen]]]]?
 'This man, who saw him?'
 b. [_{TopP} *Diesem Mann* [_{CP} wer hat [_{TopP} t [_{TopP} *dem* [_{TopP} was gegeben]]]]]?
 'This man, who gave him what?'

As I argue in an earlier paper, Left Dislocation in German is the result of movement of the left-dislocated element with an obligatory spelling out of one trace: this spell-out takes place in the form of a resumptive pronoun, agreeing in Case with the left-dislocated element—here represented in italics. (For motivation for this trace-spell-out, please see Grohmann 1997 and in progress; for a more differentiated analysis that *only* bears on the following in a technical sense and retains the empirical insight, I refer the interested reader to Grohmann, to appear.)

If we attribute “topicality” of Wh-elements to partitivity, we would expect to see something similar in English, too—if (11a) is on the right track. We can indeed witness such behaviour. Extraction of a Wh-phrase—even if more complex than a mere Wh-element—out of a Wh-phrase is ungrammatical in English; extraction of a partitive Wh, however, is only marginally—if at all—deviant (É. Kiss 1993):

- (17) a. * *How much money* do you wonder [who to give to *t*]?
 b. ? *How much of the money* do you wonder [who to give to *t*]?

Note that this fits right into the present approach: Wh-phrases with inherent topic properties should allow more freedom in extraction than non-topical Wh-elements. We can summarize the relevant results and the arising questions for the next section as follows. Cross-linguistically, D-linked Wh-elements can be extracted out of Wh-islands and topics in general can be pretty freely extracted out of Wh-islands; one question that immediately arises is whether these two observations are related. If so, why does German allow the latter, but not the former? Furthermore: why can certain elements be fronted over a Wh in German?

4. THE ANSWER: WH-LEFT DISLOCATION

Pondering why Wh-extraction out of a Wh-island in German should not be permitted—given the current approach to “Wh-topics” on the one hand (as repeated in (18a)), and the notion of “Wh-topics” argued for here and elsewhere on the other—, a combination of these ideas with those on Left Dislocation leads to a construction type represented by (18b) and (18c), where a fronted Wh is co-referent with a resumptive pronoun in the embedded clause.⁷

- (18) a. * *Welche Bücher* weißt du [welche Studenten *t* gelesen haben]?
 ‘Which books do you know which students read?’
 b. *Welche Bücher* weißt du [*die* welche Studenten *t* gelesen haben]?
 ‘Which books do you know which students read them?’
 c. *Was* weißt du [*das* welche Studenten *t* gelesen haben]?
 ‘What do you know which students read?’

There are two Wh-elements in the embedded clause, hence licensing Wh-topicalization (following DRQ for Multiple Wh in German). Note that at the point of the derivation when the embedded clause is assembled, all features and conditions are satisfied. Further movement of a Wh is not possible (18a)—unless its trace is spelled out as a resumptive pronoun.

I suggest that only the presence of a phonetically realized element may license DRQ for further syntactic operations.

Note that the resumptive pronoun must precede the embedded Wh, as shown in (19).⁸

- (19) a. * *Welche Bücher* weißt du [welche Studenten *die* gelesen haben]?
 b. * *Was* weißt du [welche Studenten *das* gelesen haben]?
 ‘What do you know which students read?’

This suggests that topic phrases to the left and right of a Wh-bearing CP are crucial. And it is the one to the left, i.e. preceding CP, that allows for extraction—it is the escape hatch.

Under the approach taken here, the Wh left behind must be the one in SpecCP and the extracted Wh must have (at least) moved to TopP preceding CP. This is the TopP that we have already seen at work in Bulgarian as well as in German left-dislocated constructions.

We can argue that the originally lower Wh in the embedded clause (i.e. the one that would normally end up in SpecTopP) has not checked its Wh-feature—unlike the higher one in SpecCP; its movement inside the embedded clause is rather motivated by satisfying DRQ. It thus may move on to matrix CP to check a Wh-feature off—if it spells out its trace in the escape hatch position as a resumptive.⁹

Something similar we can observe in topic-extraction. While topics may be extracted out of Wh-islands as shown in (1), elements that are left-dislocated over a Wh in the embedded clause may not be further moved. Compare (20) with cases such as (16).

- (20) a. * *Diese Bücher weiß ich [die welche Studenten t gelesen haben]*
 ‘These books, I know which students read the’
 b. * *Bücher weiß ich [die wer t gelesen hat]*
 ‘Books, I know who read them’

Let me finally mention the difference assumed in Grohmann 1997 between Left Dislocation—where Case-agreement is obligatory—and Hanging Topic constructions which lack this agreement. Only the former is derived by movement, while the left-dislocated element in the Hanging Topic constructions is base-generated in its Spell-Out position. From this it would follow that the extracted Wh related to a resumptive pronoun must be moved out and agree in Case with the pronoun. This expectation is borne out, as the contrast in (21) shows:

- (21) a. *Welchen Mann weißt du [den welche Frau t geküßt hat]?*
 ‘Which man do you know which woman kissed him’
 b. * *Welcher Mann weißt du [den welche Frau t geküßt hat]?*
 ‘Which man do you know which woman kissed him’

The extracted Wh in (21a) agrees in Case with the resumptive pronoun in the embedded clause (both are marked Accusative); the extracted Wh in (21b), however, is marked for Nominative, as is common for Hanging Topics (“Nominativus Pendens”). Only the option where agreement exists is grammatical, lending further support to the analysis that the Wh is moved, not base-generated. The reader may be interested to learn that even speakers who accept the type of “Wh-Left Dislocation” presented here cannot extract a Wh-subject or a Wh-adjunct out of a Wh-island with a resumptive left behind. I will leave further discussion of this classic “ECP-effect” open for the future.

In this final section, I have presented a case of Wh-extraction out of a Wh-island in German which is generally thought to be impossible. The case we have seen involves extraction with obligatory spelling out of the trace in the embedded escape hatch as a resumptive pronoun.

5. CONCLUSION: RESTRICTED WH-EXTRACTION OUT OF WH-ISLANDS

Following up on the cross-linguistic tendency that D-linked Wh-phrases can be extracted out of Wh-islands, it comes as a surprise that this does not seem to hold for German—given a DRQ-approach for Multiple Wh where both Wh bear topic-features. A closer look at German reveals, however, that extraction is possible when the trace in the escape hatch is spelled out as a resumptive pronoun, the strategy well-known from Left Dislocation. As this resumptive can only be the result of movement, we have fairly good evidence in favour of both: (i) a multiple leftwards-movement-analysis of DRQ and (ii) Wh-extraction in German.

NOTES

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¹ For a straightforward exposition, I will use this notation throughout: the extracted element and its embedded trace are italicized, while the intervening element is underlined. Please bear in mind that I only indicate one (possible) trace of the extracted element, while there may be more than one trace in the course of the derivation.

² For D(iscourse)-Linking, see Pesetsky 1987; with respect to the present issues (i.e. extractability), I refer the reader to the discussions in Cinque 1990, Comorovski 1996, among others. For the purposes of this paper, let us call complex Wh-phrases "D-linked."

³ Wu convincingly argues in favour of syntactic movement of certain Wh-elements: these instances of overt movement are not driven by the need to check a Wh-feature but rather take place when the Wh is topicalized or focalized. In the examples shown here, the Wh-elements are "Wh-topics," much in the sense of Grohmann 1998b, presented in section 2 below.

⁴ Note that some English dialects allow (8b), i.e. fronting of a bare object-Wh over the subject-Wh. Interestingly, these dialects make this construction only available in the context depicted in (8), but not in (7). We can account for this straightforwardly if DRQ is also at work in these English dialects. This is not an unreasonable assumption: after all, both languages are closely related and DRQ is arguably a condition across many Germanic dialects. I am grateful to Bruce Morén for pointing this out to me.

⁵ I will leave out a discussion of other pied-piped material in this area (see Grohmann 1998b:30ff. for details); it is evident that this analysis makes use of "massive topicalization"—at least at first glance but see Grohmann, in progress for a unified approach to movement operations into the left periphery.

⁶ I will not delve into a discussion of the relationship between D-linking and topicalization. It presumably is close to the relationship already established between DRQ and topicalization.

⁷ The result is, to the possible surprise of many, rather good—a lot of informants rate it as completely grammatical and acceptable, though it has to be added that other speakers do not. Acceptability tends to be a property of northern dialects; see also discussion commencing (21).

⁸ Note further that this strategy differentiates these cases of "Wh-Left Dislocation" from common cases of Left Dislocation; another crucial difference is that (18b-c) occur only in embedded (=verb final) contexts, while Left Dislocation is a root phenomenon (Verb Second). With this in mind, "Wh-Left Dislocation" may be a misnomer, but for lack of terminology and for ease of exposition, let us stick to this term to show the dependency between a displaced element and a resumptive pronoun.

⁹ Let us say for the time being that DRQ can only be satisfied by the presence of overt material in the relevant positions. Note also that I did not indicate more detailed information in the constructions in this section. I leave the more technical details here (Grohmann, to appear). The main concern is the "massive topicalization" alluded to before. In Grohmann, in progress I hope to develop an approach that captures the same insights but correlates semantic clause types with their syntactic instantiation (also Etxepare and Grohmann 1998, Grohmann 1998a).

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